



unesco

Intergovernmental
Oceanographic
Commission

TEP Step 4

Consultation and Official Approval of a TEP

Session 4.2
By Rick Bailey

*North-West Indian Ocean Regional Workshops on
Tsunami Inundation Mapping and Evacuation Planning
Muscat, 21-25 April 2024*

Public Assessment of the draft TEP

- Are **evacuation zones** clearly outlined?
- Does the plan tell clearly **how to get to the safe area** or shelter buildings?
- Are the **evacuation routes** realistic and free of obstacles?
- Does the plan tell **when to evacuate** and how to **get warnings**?
- Does the plan tell **how to evacuate**?
- Is the plan **understandable** and **easy to memorize**?
- What can still be **improved**?



How to conduct a public assessment?

- Involvement of community members at an early stage in the planning process
- Community meetings
- Focus group discussion
- Interviews
- Field visits and walking evacuation routes
- Let people explain the map to you

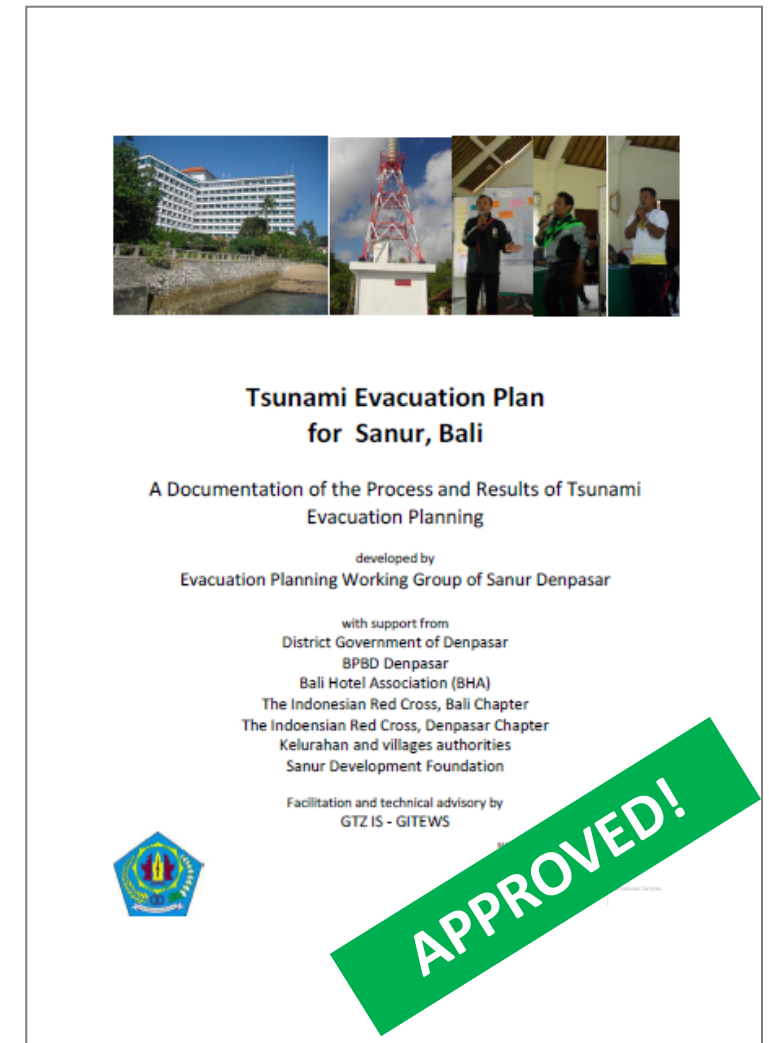


North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024

Official Approval of the TEP

Once the TEP has been assessed and validated it is ready for official approval. Important to consider:

- TEP it is usually a **mandate** of the local authorities
- A TEP represents the **official policy for tsunami evacuations**, including official announcements of evacuation orders
- Evacuations are **critical process** and can make the difference between life and death. This also involves **liability** issues
- Strengthens credibility of the TEP

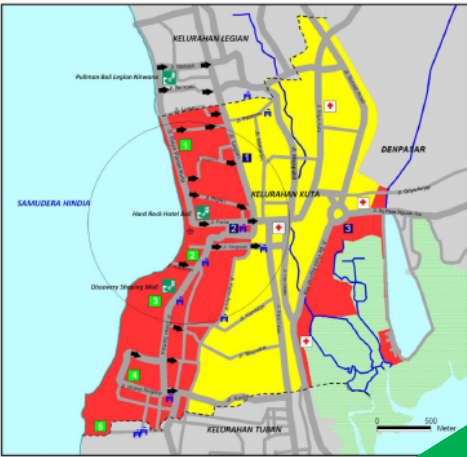


Forms of Official Approval

It always depends on the national and local legislation. It is preferable to have a high level of endorsement if possible.

Possible options are:

- Decree by the head of administration
- Local regulation
- Endorsement by LDMO
- Official logos on the plan and map

Tsunami Evacuation Procedure	Tsunami Evacuation Map for Kuta Peta Evakuasi Tsunami di Kuta	Prosedur Evakuasi Tsunami
<p>1. Get prepared - long before anything happens</p> <ul style="list-style-type: none"> • Study the evacuation map and get familiar with the evacuation procedures • Discuss procedures within your family and neighborhood • Participate in drills and information events • As a visitor to Bali: please check with your hotel for procedures <p>2. If you feel an earthquake - protect yourself</p> <ul style="list-style-type: none"> • Don't panic! • Drop, cover and hold! <p>3. After an earthquake, be aware that a tsunami may follow</p> <ul style="list-style-type: none"> • Move away from the beach immediately as a measure of precaution! • After strong and longer lasting ground shaking, don't wait for an official warning. Leave the RED ZONE immediately! • Listen to announcements from local authorities and the radio for further information. Pay attention to the siren! <p>4. The sound of the siren is the official call for evacuation</p> <ul style="list-style-type: none"> • When the siren sounds, evacuate the RED ZONE immediately or look for shelter in higher buildings! • If you are in the YELLOW ZONE, go for shelter in higher floors • As a visitor in a hotel: follow the instructions of hotel staff <p>After the first tsunami wave, more waves are likely to come!</p> <p>Wait for an official "All Clear" message before leaving shelter</p>	 <p>APPROVED!</p> <p>For further information please contact the office of Information Kuta Jln Raya Kuta Telp. 0361-751814</p> <p>Untuk informasi selanjutnya hubungi Kantor Informasi Kuta Jln Raya Kuta Telp. 0361-751814</p>	<p>1. Bersiap-siap sejak jauh hari sebelum sesuatu terjadi</p> <ul style="list-style-type: none"> • Pelajari peta evakuasi dan kenali dengan baik prosedur evakuasi • Bahas prosedur bersama-sama dengan keluarga dan tetangga • Berperan serta dalam geladi dan penyuluhan • Untuk para pelancong di Bali, agar mencari tahu prosedur hotel anda <p>2. Jika merasakan gempa bumi - lindungi diri anda</p> <ul style="list-style-type: none"> • Jangan panik • Merunduk, berlindung dan berpegangan <p>3. Setelah gempa bumi, sadari bahwa tsunami kemungkinan akan menyusul terjadi</p> <ul style="list-style-type: none"> • Segera tinggalkan daerah pantai sebagai langkah kewaspadaan • Setelah merasakan getaran yang kuat dan lama, jangan menunggu peringatan resmi. Segera lindungi diri anda • Dengarkan perintah daerah dan staf hotel selanjutnya. Perhatikan informasi peringatan resmi <p>Jika anda berada di ZONA KUNING, bergeser menuju tempat berlindung, naiklah ke lantai atas</p> <ul style="list-style-type: none"> • Para pelancong yang berada di hotel, ikuti instruksi dari staf hotel <p>Setelah gelombang pertama datang, gelombang yang lain mungkin akan menyusul</p> <p>Tunggu pesan resmi "Tsunami telah berakhir" sebelum meninggalkan tempat perlindungan</p>



THANK YOU



unesco

Intergovernmental
Oceanographic
Commission

TEP Step 5

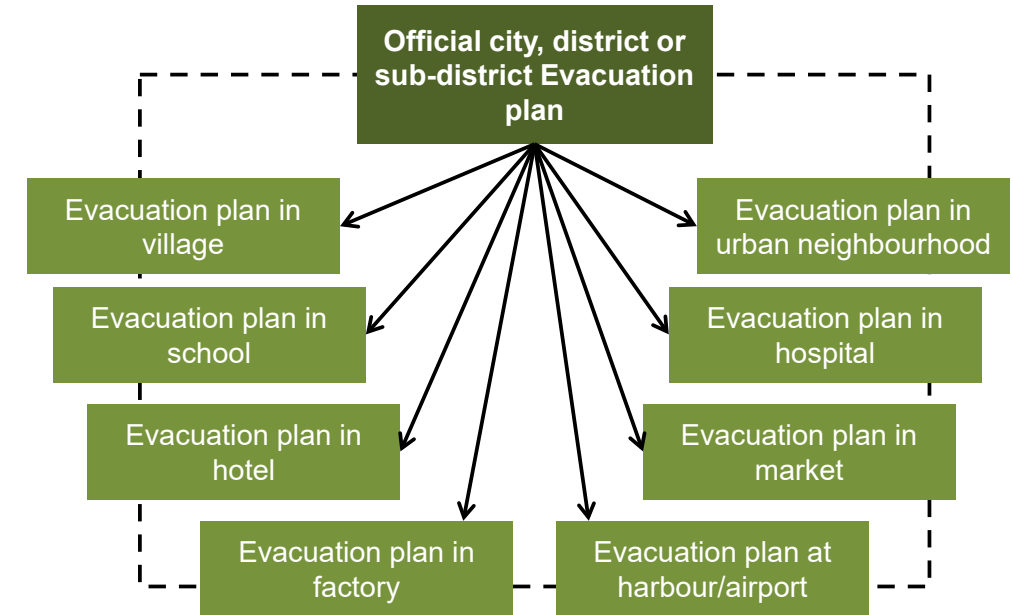
Public awareness and knowledge of the TEP

Session 4.2
By Ardito Kodijat

*North-West Indian Ocean Regional Workshops on
Tsunami Inundation Mapping and Evacuation Planning
Muscat, 21-25 April 2024*

Introduce the TEP to other stakeholder

- Lower level administration units
- All stakeholder involved in warning dissemination, evacuation support and community preparedness
- All schools, hospitals and public transportation facilities in the evacuation zone
- Tourism operator and hotel associations



Encourage them to develop their own institutional TEP and disseminate it within their institution

Introduce the TEP to the general public

- Many **different means** can be used
- **Community Meetings** are particular suitable to raise awareness and encourage for personal and neighbourhood preparedness measures
- Training of **local volunteers** who are already involved in the community can help ensuring knowledge and awareness in the long term
- **Media briefings** are important to ensure a good understanding of the plan and procedures and to motivate media coverage



Public events



North-West Indian Ocean Regional Workshops on Tsunami Inundation Mapping and Evacuation Planning, 21-25 April 2024



Targeting specific groups



North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024



School education



North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024



Signage and Information Boards



North-West Indian Ocean Regional Workshops on Tsunami Inundation Mapping and Evacuation Planning, 21-25 April 2024



Poster, Booklets, Flyer



North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024





THANK YOU



unesco

Intergovernmental
Oceanographic
Commission

TEP Step 6

Regular Exercises and Improvements of the TEP

Session 4.2
By Nora Gale

*North-West Indian Ocean Regional Workshops on
Tsunami Inundation Mapping and Evacuation Planning
Muscat, 21-25 April 2024*

Background

- **Exercises** are activities that simulate a real-life situation.
- Tsunami exercises provide an opportunity to review and **test evacuation plans and standard operating procedures** and reduce complacency when a real tsunami has occurred recently.
- Key players, such as agencies and communities, can review or test procedures and **practice participation within defined roles**.
- Exercise **benefits** include improved coordination with and between agencies, operational readiness, better response times, clarification of roles and responsibilities, and increased public awareness.



- In the Indian Ocean, seven (7) regional exercises have been conducted since 2009 with the most recent exercise, **IOWave23**, held in 2023.
- All North-west Indian Ocean countries participated in Exercise IOWave23.

North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024



Conduct evacuation exercises regularly!

- UNESCO-IOC **Tsunami Ready** preparedness indicator: “A community tsunami exercise is conducted **at least every 2 years**”.
- Exercises provide an **opportunity to train communities, the public, and institutions** for responding to emergencies.
- Evacuation exercises **test the capability of the communities to evacuate tsunami risk areas** in a timely manner.
- They also provide momentum to **increase overall tsunami awareness, preparedness, and education**.
- Regular exercises have been shown to **empower communities** respond better during emergency situations.



Preparation of exercises

- **Establish a team** to prepare and conduct the exercise
- Decide on the exercise **aims** and its **objectives**.
- Define clear **key performance indicators and success criteria**.
- Determine the **scope** (i.e. what the exercise will test, who will be involved, scenario, location, date, and time).
- Exercises should be **realistic** and test procedures and communication technology that are already in place with the option of additional complexity and time pressure.
- It is important to provide clear **information to the public and stakeholder** before and after large-scale exercises.
- Prepare **written documentation**, such as an exercise manual, including the scope, implementation and evaluation procedures.
- Hold a **community briefing** to familiarise people with existing tsunami evacuation maps and procedures for evacuating and sheltering.



North-West Indian Ocean Regional Workshops on Tsunami
Inundation Mapping and Evacuation Planning, 21-25 April 2024

Scale of exercises

- The **scale or type of exercise** is determined by its objectives and resources.

Below are some different exercise types with increasing complexity:

- **Community exercise** are aimed to familiarise people with evacuation procedures and to raise awareness. These should be simple and may also be fun.
- **Evacuation drills** are small exercises that can be regularly run in schools and other vulnerable institutions to practice internal procedures.
- **Tabletop exercises** can be held in a conference room environment. They are designed to promote constructive discussion among participants from different organisations in the tsunami warning chain.
- **Full scale exercise** test end-to-end warning and evacuation procedures. They require extensive preparation and coordination. Good opportunities are the regular IOWave exercises.



During the exercise

Follow pre-agreed procedures:

- Following your country's tsunami warning chain, standard operating procedures and evacuation plan.
- Try not to make up procedures on the day, but rather follow what has already been agreed on.
- Pre-prepared operational checklists and flowcharts can be useful to refer to during the exercise.

Other things to note:

- Any changes to your tsunami evacuation plan can be made after the exercise.
- Have observers on hand to capture and document what happens during the exercise.



Evaluate the exercise!

- Exercises must be followed up by an **evaluation** and the **development and implementation of improvement measures** to be effective.
- Do **not expect perfect results** and **evaluate thoroughly**. A tsunami exercise is to test what works and what does not.
- **Define evaluation criteria** in line with the exercise objectives and use observation sheets or checklists to **document observations** .
- You may involve internal as well as external **observers**. Make sure that results are well documented.
- “**Hot debriefs**” can be done directly after the exercise to capture fresh impressions and experiences from participants and stakeholder.
- “**Cold debriefs**” are typically held within 4-weeks of the exercise once participants have had time to reflect on what went well and what needs improvement.




From learning to action

- **The evaluation report** should be **presented** and **discussed** in a stakeholder meeting and must be **accepted by the local authority**.
- The final report should outline **measures** and **actions for improvements** with clear assignments of responsibilities, timelines and reporting requirements.
- If improvements require **changes in the evacuation maps or the strategy**, this must be followed up accordingly and stakeholders and community must be informed!
- Check that all improvement **measures have been implemented before initiating the next exercise**.



Further information

Intergovernmental Oceanographic Commission
Manuals and Guides **58**




United Nations
Educational, Scientific and
Cultural Organization

**How to Plan, Conduct
and Evaluate UNESCO/IOC
Tsunami Wave Exercises**

<https://oceanexpert.net/document/10003>

Intergovernmental Oceanographic Commission
Technical Series **181**



EXERCISE INDIAN OCEAN WAVE 23
An Indian Ocean-wide Tsunami
Warning and Communications Exercise

4–25 October 2023

Volume 1 Exercise Manual

UNESCO

<https://oceanexpert.net/document/32932>



eco
environment coastal & offshore

Magazine News Features Directory Advertise Marine Instruments Events Subscribe

Evolution of Ocean Wide Exercises in the Indian Ocean

POSTED ON JULY 6, 2021



UN Ocean Decade

An online series of stories connected to the Decade's seven societal outcomes

<https://www.ecomagazine.com/in-depth/featured-stories/evolution-of-ocean-wide-exercises-in-the-indian-ocean>

North-West Indian Ocean Regional Workshops on Tsunami Inundation Mapping and Evacuation Planning, 21-25 April 2024





THANK YOU